



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,328	03/12/2001	James M. Chen	4488	1020

7590

12/07/2006

Chief Patent Counsel
Engelhard Corporation
101 Wood Avenue
P.O. Box 770
Iselin, NJ 08830-0770

EXAMINER

JOHNSON, EDWARD M

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,328

Applicant(s)

CHEN ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,5-7,10-14 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,5-7,10-14 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Appeal Brief

1. The rejection under §112(2), below, was not made in the Final Office Action and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 10-14, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18, line 5, "nitrous oxide and nitrous oxide" appears redundant. Examiner suggests "nitrous oxide and NOx".

Claim 18, "gas stream containing ammonia, nitrous oxide, and NOx and has a temperature" is unclear. Examiner suggests -- gas stream containing ammonia, nitrous oxide, and NOx has a temperature--.

Claim Rejections - 35 USC § 103

Art Unit: 1754

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 10-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley et al. US 5,200,162 in view of Fetzer '928.

Regarding claim 18, Riley '162 discloses a process for nitrous oxide decomposition comprising contacting a nitrous oxide and NOx stream with ammonia and zeolite (see column 4, lines 34-38 and column 8, lines 48-51), at 150-550 degrees Celsius (see column 5, line 1).

Riley '162 fails to disclose beta zeolite selective for simultaneous reduction.

Fetzer '928 discloses beta zeolite (see above).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the beta zeolite selective of simultaneous reduction of Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly

Art Unit: 1754

suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NO_x (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claim 3, Riley '162 discloses 150-550 degrees Celsius (see column 5, line 1).

Regarding claims 10-11, Riley '162 discloses iron-exchanged zeolites (see column 5, lines 10-13).

Regarding claims 12-14, Riley '162 discloses up to 30% or significantly lower (see claim 3, and column 1, lines 19-26).

6. Claims 3, 5-7, 10-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. US 4,571,329 in view of Fetzer '928.

Regarding claim 18, Kato '329 discloses a process for ammonia reduction of nitrous oxide comprising contacting nitrous oxide containing gas with ammonia (abstract) and zeolite (see column 3, lines 43-48) and discloses removal of NO_x and N₂O (abstract).

Kato fails to disclose beta zeolite selective for simultaneous reduction.

Fetzer '928 discloses beta zeolite (see above).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to

Art Unit: 1754

use the beta zeolite of Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NOx (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claims 3, Kato '329 discloses 300-500 degrees Celsius (see column 7, line 30).

Regarding claims 5-7 and 12-14, Kato '329 discloses 1000 ppm of N₂O and ammonia (see column 7, lines 22-25).

Regarding claims 10-11, Kato '329 discloses Fe exchanged zeolite (see column 4, lines 23-25).

7. Claims 3, 10-11, and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchitani et al. US 5,756,057 in view of Fetzer '928.

Regarding claim 18, Tsuchitani '057 discloses a method for removal of NOx comprising contacting a stream containing N₂O (see column 4, lines 33-36) with reducing agent such as ammonia (see column 4, lines 41-43 and 48-50) and a catalyst comprising a zeolite (see column 5, lines 7-11, Example 21, and Table 1).

Tsuchitani fails to disclose beta zeolite.

Fetzer '928 discloses beta zeolite (see above).

Art Unit: 1754

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the beta zeolite of Fetzer in the nitrous oxide decomposition process of Riley because Fetzer discloses his beta zeolite as particularly suitable to make possible the reduction or decomposition of nitrous oxide (see column 4, lines 14-23) and precious metals for both nitrous oxide and NOx (see column 4, lines 65-68 and column 8, lines 50-51).

Regarding claim 3, Tsuchitani '057 discloses a temperature of 400 degrees (see column 20, lines 46-59 and 65-66).

Regarding claims 10-11, Tsuchitani '057 discloses exchanging with an ionic copper amine complex (see Example 21).

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman

Art Unit: 1754

can be reached on 571-272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.



Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ

December 5, 2006